

Physics 540 Fall 2005

HW # 11 Due Tuesday December 6

1. Kittel p. 124 problem 25.4
2. Kittel p. 124 problem 25.5
3. What is the equilibrium ratio of ortho (nuclear spins aligned) to para (anti-aligned) H_2 molecules in a gas at 100K? You may neglect vibrational excitations since $\hbar\omega = 0.51$ eV is high compared with T , but not rotational excitations since $\hbar^2/I = 0.015$ eV.
4. Kittel p. 133 problem 27.5
5. Kittel p. 140 problem 28.2